

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

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Low bid of \$2,643,000 was made by J. H. Wise & Son, Inc., for construction work at the aircraft nuclear propulsion area, USAEC's reactor testing station, Idaho Falls, Idaho. Bid was lowest of seven made; work will add 3,600 square feet to that now available for the aircraft nuclear propulsion facilities, which are operated by General Electric Co. for the USAEC. (Other CONTRACTS AWARDED, BIDS ASKED, p. 2 this LETTER.)

Arrangements to lease 42 uranium mining claims on a royalty basis from Marysvale Uranium Co. of Utah have been made by Vanadium Corp. of America. Claims extend over 350 acres in the Marysvale district, where VCA operates the only fissure-type uranium mine in the U. S., and are west of VCA's properties. W. C. Keeley, VCA president, said the acquisition would give the firm additional uranium-vanadium ore reserves for operations at their nearby Naturita, Colo., mill. (Other RAW MATERIAL news, p. 3 this LETTER.)

Although occurrences of radioactive minerals have been confirmed from several sources in Mexico, no deposits of commercial size or concentration have been found or worked, according to Sumner M. Anderson, Latin American specialist of the U. S. Bureau of Mines. A survey of uranium in Mexico, and that country's laws relating to fissionable materials and nuclear energy, is available from Bureau of Mines, Pittsburgh, Pa. on request. (Other BOOKS, PUBLICATIONS on nuclear subjects, p. 3 this LETTER.)

LIDO, latest research reactor at Harwell, England, (atomic energy research establishment) went critical for the first time last fortnight. Intended primarily for shielding studies, it will be used to assist development of the British submarine nuclear propulsion unit. Design and construction was carried out by Navy and Harwell staff, with components furnished by: Vickers Armstrong (Barrow) Ltd., (reactor units); Ericssons Telephones, Ltd., (instruments); Rolls Royce, Ltd., (control gear); and Marston Excelsior (fuel elements). (Other RESEARCH PROJECTS, p. 5 this LETTER.)

Yankee Atomic Electric Co., group of 12 New England utility firms, has awarded contract to Westinghouse Electric Corp., Pittsburgh, for design and development of the nuclear reactor to be used in its 134,000 electrical KW nuclear power plant. Over-all development and construction will be handled jointly by Stone & Webster Engineering Corp., and Westinghouse. Rowe, Mass., is to be plant site, with initial operation expected there in 1960. (Other BUSINESS NEWS, p. 2 this LETTER.)

Expansion of basic research in nuclear energy, chemistry and physics, by Mine Safety Appliances Co., Pittsburgh, will be augmented by its new wholly-owned subsidiary MSA Research Corp., recently formed by the firm. In addition to research for the parent firm, MSA will do contract research for government agencies and private industry. Director of research will be C. B. Jackson, who had been research director of Mine Safety's Callery, Pa., plant and of a subsidiary, Callery Chemical Co.

ATOMIC ENERGY BUSINESS NEWS...

NUCLEAR POWER PLANT CONTEMPLATED: Preliminary studies have been made by Pasadena, Calif.'s municipal light and power department of a nuclear power plant of 40,000 or 60,000 electrical KW capacity, the department has advised the USAEC. The plant would utilize a 400 million BTU per hour boiling water reactor, with an isolating steam generator and a separately fuel-fired superheater, the department's report stated.

GO AHEAD IS GIVEN TO NUCLEAR POWER PLANT: Last week the USAEC OK'd contract negotiations for design and development work on a nuclear power plant for the City of Piqua, Ohio. North American Aviation's Atomics International division has been doing preliminary experimental work on the organic moderated reactor the plant will use; results of this preliminary work have been satisfactory. Ultimate cost of the plant will be \$7 million, with a large portion borne by the USAEC; Piqua will furnish land, buildings and some equipment at a cost of \$4 million.

EXPORT LICENSE APPLICATIONS FILED:- AMF Atomics, New York, has applied to the USAEC for license to export 1-megawatt swimming pool type nuclear reactor which the firm built for Technischen Hochschule Munchen, Munich. And an application for a license to manufacture a 50-KW homogeneous reactor and to transfer the facility to Marubeni-Iida Co., New York, for export to the Japan Atomic Energy Research Institute, Tokyo, has been made by Atomics International, Canoga Park, Calif.

BIDS ASKED, CONTRACTS AWARDED...in nuclear field...

BIDS ASKED:- Bids for construction of electrical substation, and associated equipment, at national reactor testing station, Idaho Falls, Idaho, have been asked by USAEC, Idaho Falls, under AT(10-1)-850. Bid submission deadline is Oct. 19 for the job, estimated at \$350,000.

CONTRACTS AWARDED, CANADA:- Contract has been awarded by Northspan Uranium Mines, to B. F. Goodrich, Canada, Ltd., for rubber lining of 147 major tanks and 80 smaller tanks to be used in uranium processing at Northspan's B' Ind River, Ontario, operations. Several miles of pipes and fittings will also be lined.

CONTRACTS AWARDED, U.S.:- Contracts to study radiation effects on materials have been received by Midwest Research Institute, and Massachusetts Institute of Technology. The Midwest contract, awarded by the U. S. Army's quartermaster Corps, is for research on the addition of certain chemicals to food prior to its irradiation, in an effort to eliminate reactions which cause undesirable tastes and odors. The MIT study is concerned with effects of high energy radiation on cotton. Objectives here are to learn whether irradiation may be used to make useful new textile products from cotton, and thereby enhance its market position.

A \$24,458,000 U. S. Navy contract is to be awarded (following negotiations) Westinghouse Electric Corp., Pittsburgh, for construction of nuclear reactor components. The units are for nuclear powered submarines, construction of which is now underway.

Twenty-one new research contracts, and twenty-seven renewals, were among a group of awards recently made by the USAEC to U.S. universities and private institutions for work in the fields of medicine, biology, biophysics, radiation instrumentation and special training. Parke, Davis & Co., Detroit, with a grant of \$50,000.00, will study certain effects on animal tissue of total body irradiation with gamma rays. At the University of California, under a \$14,000 grant, a study of decontamination of soils containing radioactive elements and salts will be made. Another grant (\$34,000), made to the University of Hawaii, is concerned with sea water contaminated with end products of nuclear weapons detonations, and the degree to which such materials are taken up by fish and other marine organisms.

BID PROPOSALS MADE:- Eleven proposals have been received from U.S. industrial firms by the USAEC's Schenectady Operations office for design, development and construction of a food irradiation reactor for the U.S. Army's ionizing radiation center. The proposals, in response to general invitation issued July, 1956, by the USAEC, were made by ACF Industries, Inc.; AMF Atomics, Inc.; Atomics International; Bell Aircraft Corp.; Blaw-Knox Co.; Burns & Roe, Inc.; Ebasco Engineering Co.; H. K. Ferguson Co.; Goodyear Tire & Rubber Co.; Kaiser Engineers; and Rust Engineering Co. (Reactor will be water-moderated and fueled with solid fuel elements. Preliminary design concept is being completed for the USAEC by Internuclear Co., Clayton, Missouri.)

ATOMIC ENERGY FINANCIAL NEWS...

WORLD BANK MAY FINANCE NUCLEAR PROJECTS ABROAD:- World Bank will have a major role in the financing of nuclear power plants in many parts of the world, Lewis L. Strauss, Chairman, USAEC, predicted last week at a Washington meeting of the board of governors of the bank. Also addressing the meeting were Sir Edwin Plowden, chairman, U.K. Atomic Energy Authority; Sir John Cockcroft, director, Atomic Energy Research Establishment, Harwell; and W. K. Davis, director of reactor development, USAEC. General theme of the meeting indicated the World Bank (International Bank for Reconstruction & Development) would be inclined to consider proper proposals for building large nuclear power plants in many parts of the world. For nuclear power to be practicable, the four speakers pointed out, the area must already possess good electrical distribution facilities, be a region of high conventional fuel costs, and have an assured supply of nuclear fuel.

SALE OF URANIUM PROPERTIES "TO COMPANY ADVANTAGE", FIRM STATES:- The interest in uranium lands in New Mexico sold by Holly Minerals, Inc., to Phillips Petroleum Co. (this LETTER, 9/18/56, p. 3), brought Holly \$1,750,000 for property which it acquired last Winter, Holly has now advised its stockholders. It would have taken two years to bring the property to the point where any cash flow accrued, and five additional years to realize operating profits comparable to the sales price, Holly states. The firm's other uranium activities, both exploring and producing ore, will continue.

NEW FINANCING BY NUCLEAR INSTRUMENT FIRM:- Private investors have taken up \$750,000 of 10-year 5½% subordinated debentures of Baird Associates-Atomic Instrument Co., Cambridge, Mass. Monies are to repay short-term bank debts, and to finance acquisition of new facilities adjoining Baird's Cambridge plant. New facilities are to house Atomic Instrument Co., merged into Baird June 1st, 1956. Debentures carry warrants allowing holders of each \$1,000 principal amount to buy 50 shares of common stock at 110% of market price at time of issuance for first five years, and 120% for following five years. (Company's sales currently are at \$4,000,000 annual rate with backlog of orders now on books of approximately \$2,500,000.)

NEW BOOKS, PUBLICATIONS...in the nuclear field...

Nuclear Metallurgy, Vol. 3. Three papers presented at symposium on nuclear metallurgy at AIME meeting, Oct. 8, 1956, Cleveland. 54 pages. --AIME, 29 W. 39th St., New York 18. (\$3.75; to AIME members, \$2.50)

Atomic Quest, by Arthur H. Compton. "Popular" account of development of atomic bomb in U.S. during period 1941-1945. First hand account by Dr. Compton, who was a major participant in early research on nuclear weapons. --Oxford University Press, New York 11. (\$5.00)

Radiation Sterilization of Food; Research Reports. Twelve newly released reports of work conducted for the U. S. Army's quartermaster food and container institute; PB-121300 (75¢); PB-121301 (50¢); PB-121302 (\$1.50); PB-121303 (\$2.00); PB-121304 (75¢); PB-121305 (\$2.75); PB-121306 (75¢); PB-121307 (50¢); PB-121308 (\$1.25); PB-121309 (50¢); PB-121310 (\$2.00); PB-121313 (50¢). --Office of Tech. Services, Wash. 25, D.C.

Handbook of Industrial Radiology. Non destructive testing using gamma ray and X-ray techniques, as developed at U. S. Naval Ordnance Laboratory, White Oak, Md. 153 pages. No. PB-121182. -- Office of Tech. Services, Wash. 25, D.C. (\$4.00)

Proceedings of Sixth Annual Rochester Conference on High Energy Nuclear Physics. Papers presented at this April 3-7, 1956 conference. 362 pages. --Inter-science Publishers, Inc., New York 1 (\$3.75).

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Homestake Mining Co. will construct and operate a 570-ton/day uranium mill in the Ambrosia Lake area of New Mexico in a limited partnership agreement under which, as a general partner, Homestake will handle negotiations with the USAEC. Ores milled will be from property contributed to the partnership by United Western Minerals Co., N.M.; J. H. Whitney Co., N.Y.; White, Weld & Co., N.Y.; and others. Name of limited partnership venture will be Homestake New Mexico partners.

CANADA:- Consolidated Denison, which 2 years ago was still drilling, now expects that its \$37 million program of mine preparation and plant construction will enable it to start production by early 1957. Some 1,300 persons are now working at the site.

ATOMIC ENERGY PATENT DIGEST...

PATENT GRANTS TO PRIVATE INDIVIDUALS AND/OR ORGANIZATIONS:- Crystal dosimeter utilizing radiation sensitive crystal which darkens when irradiated by the radiation under test. U. S. Pat. No. 2,763,786 issued Sept. 18, 1956; assigned to Eastman Kodak Co., Rochester, N.Y. (Inventors: P. B. Mauer, C. R. Taylor.)

Inspection device using radiographic means. U. S. Pat. No. 2,763,787 issued Sept. 18, 1956; assigned to General Electric Co., New York. (Inventor: J.E. Jacobs.)

Radioactivity well logging using induced and scattered gamma rays. U. S. Pat. No. 2,763,788 issued Sept. 18, 1956; assigned to The Texas Co., New York. (Inventor: G. Herzog.)

Device to control a variable condition, utilizing ionizing energy. U. S. Pat. No. 2,763,798 issued Sept. 18, 1956; assigned to The Ohmart Corp., Cincinnati, Ohio. (Inventor: Philip E. Ohmart.)

Comparator, in effect a measuring device. U. S. Pat. No. 2,763,790 issued Sept. 18, 1956; assigned to The Ohmart Corp., Cincinnati, Ohio. (Inventor: Philip E. Ohmart.)

PATENT GRANTS TO GOVERNMENTAL ORGANIZATIONS:- Process of beneficiating Florida pebble phosphate to increase yield of uranium concentrates. U. S. Pat. No. 2,763,371 issued Sept. 18, 1956; assigned to United States of America (USAEC). (Inventor: I. M. Le Baron.)

Wetting of heat transfer surfaces with liquefied metal heat transfer media. U. S. Pat. No. 2,763,570 issued Sept. 18, 1956; assigned to United States of America (USAEC). (Inventors: O. C. Shepard, E. P. French.)

Process of reducing corrosion on iron metals when in contact with water at room temperature and superatmospheric pressure. U. S. Pat. No. 2,763,611 issued Sept. 18, 1956; assigned to United States of America (USAEC). (Inventor: C. R. Breden.)

Spark gap device for installation on a two-conductor transmission line. U.S. Pat. No. 2,763,816 issued Sept. 18, 1956; assigned to United States of America (USAEC). (Inventor: W. R. Baker.)

TRADE-MARK GRANTS:- Trade mark "Universal Atomics" is to be issued under SN-1,489 by U. S. Pat. Off. to Universal Atomics Corp., New York, N.Y. Mark covers that firm's transistorized power supplies, radiation detection instruments. Geiger counters, and scintillation counters.

Trade-mark "Nutronic" is to be issued Nuclear Electronics Corp., Phila., Pa., under SN-5,860. Mark covers scintillation spectrometer, beta/gamma survey meter, radiation monitor, scintillation detector head, and other of the firm's products.

TRADEMARK SUITS:- Suit has been filed by Nuclear Consultants, Inc., doing business as NRD Instrument Co., against Neodyne Research & Development Corp., over the alleged improper use by the latter firm of initials NRD. Case is being handled in the district court, eastern district, Milwaukee, Wisc., under doc. 56/C/169.

PATENT NEWS; United States:- In a revision of its patent policy, the USAEC will now waive its statutory rights to inventions resulting from the use of certain materials it makes generally available. Materials covered include source materials, special nuclear materials, heavy water, isotopes, and materials resulting from irradiation done at USAEC facilities. Full rules are in Federal Register, Sept. 18, 1956.

PATENT NEWS; International:- All atomic energy patents assigned to governments of United States, Canada, and United Kingdom may now be used interchangeably by these countries, which may grant licenses for their use to their citizens or firms, under a recently made three-power agreement on atomic energy patent rights. The tripartite agreement covers government-owned patents or patent applications up to and including 15 Nov. 1955, a period when atomic energy operations were largely a government monopoly in each of these three countries. Non-discrimination clause in the agreement binds each government to grant licenses to nationals of the other governments on same terms that it gives its own nationals. Patents covered include those which arose out of World War II collaboration among the three governments, where patent rights have been held in trust, as well as those developed independently and owned by one government. About 50 inventions are in the "wartime collaboration" group, and patent applications have been filed on many of them in all three countries. There are several hundred covering work independent of the wartime arrangements, with many applications still under secrecy.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...

NEW PRODUCTS FROM MANUFACTURERS:- Two new collimators, for clinical and biological use, are said to offer increased sensitivity and to permit better measurement of thyroid uptake, hence allowing lowered iodine-131 doses to be used. Models P-20BF and P-20BH (these collimators) may be used with this manufacturer's scintillation detector model P-20B or spectrometer detector model RLD-2. --Tracerlab, Inc., Boston 10, Mass.

Mobile radiological survey laboratory, mounted in trailer, is suggested for survey and monitoring on reactor sites and other areas where work with radioactive materials is underway. Instrumentation includes air particle monitor for collecting, monitoring and recording airborne alpha-beta-gamma particles, gamma monitor for monitoring and recording gamma background, and other equipment. --Anton Electronic Laboratories, Inc., Brooklyn 37, N.Y.

Improved nuclear fuel element, tubular in shape, is said to represent such improvements over a typical flat type element as heat transfer surface increased 66%; metal-to-water ratio decrease of 52%; more uniform distribution of fuel; reduced flow velocity and pressure drop; and increased structural strength and rigidity. --Nuclear Div., Martin Aircraft Corp., Baltimore 3, Md.

PRODUCT NOTES:- Bendix Aviation Corp., in an expansion of its Cincinnati Division, is almost tripling its facilities there to manufacture dosimeters and nuclear and ultrasonic instruments for industrial applications.

Materials license has been given Nuclear Metals, Inc., by USAEC, for 90 grams of uranium-235 in about 20% enrichment, in the form of uranium-molybdenum alloy, for use in fabrication of fuel element test specimens for Atomic Power Development Associates.

Procedures for obtaining U. S. government funds to finance nuclear reactor projects sold abroad by U. S. firms to nations with which the U. S. has bilateral pacts, have now been given interested embassies and firms by the USAEC. A Congressional appropriation of \$5,500,000 is available for USAEC spending on this program; each nation may get \$350,000 toward the financing of an approved nuclear reactor project providing the grant is not more than one-half actual cost. Funds are paid when the recipient nation certifies the project is completed.

PROCESS NOTES:- Tests of its equipment are now being made by the Ore Beneficiation Co. of Salt Lake City which has a uranium-up grader located north of the buying station at Riverton, Wyoming. According to operators of the equipment, they are able to up-grade low grade ores from three to four times. They state that the up-grader works best with 0.08% to 0.15% ores, although in tests conducted recently they say 0.04% or up was brought to a grade of from 0.17% to 0.19%. Experimental work was done with material from the "no-pay" stockpile at the buying station.

NUCLEAR WEAPONS NOTES:- The large multi-megaton thermonuclear weapons now in the U. S. stockpile are so big that their use in large numbers would result in worldwide contamination by radioactive substances, Thomas E. Murray, USAEC Commissioner said in Washington last fortnight. Their use, he said, would thus cause serious medical and moral problems. Mr. Murray opposed the testing of these weapons; he said it was no longer necessary.

RESEARCH PROJECTS & NEW FACILITIES...

NEW COMPANY FORMED TO BUILD & OPERATE PRIVATELY OWNED NUCLEAR RESEARCH REACTOR:- New company, to build and operate a nuclear research reactor at Plainsboro, N. J., has been formed by 10 large U. S. firms. Industrial Reactor Laboratories, Inc., the new company, is made up of these ten firms, each with an equal share in the capitalization and voting; American Machine & Foundry; American Tobacco; Atlas Powder; Continental Can; Corning Glass; National Distillers Products; National Lead; Radio Corp. of America; Socony Mobil; and U. S. Rubber. Heading Industrial Reactor will be Walter Bedell Smith, chairman and president of AMF Atomics, Inc. AMF Atomics will build the reactor, which will be a swimming-pool type, with estimated cost \$1,500,000. Each member company will have private space in the new facility to work on its own projects, with a permanent staff of about thirty to handle over-all operations.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

October 2nd, 1956

